

ADDITIONAL



Service Manual

**ORDER NO.
ARP1400**

FM/AM DIGITAL SYNTHESIZER TUNER

F-551

KUC, SD, HEZ

F-551-S HEZ

F-551L HE, HB

- For servicing these models, please refer to the F-X420L(BK)/HE type service manual (ARP1220) with the exception of this additional service manual.

MODELS F-551, F-551-S AND F-551L COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model				Power requirement	Export destination
	F-X420L (BK)	F-551	F-551-S	F-551L		
KUC	—	○	—	—	AC120V only	U.S.A. and Canada
HE	○	—	—	○	AC220V, 240V*	European continent
HB	○	—	—	○	AC220V, 240V*	United Kingdom
HEZ	—	○	○	—	AC220V, 240V*	West Germany
SD	—	○	—	—	AC110V, 120V-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market

* Change the primary wiring of the Complex assembly.

- The AM tuner of the F-551L/HE and HB types are a two wave-band tuner with MW (medium wave) and LW (long wave), but the F-551/KUC, SD, HEZ and F-551-S/HEZ types are MW only.
- This additional service manual is applicable to the F-551/KUC, SD, HEZ, F-551-S/HEZ, F-551L/HE and HB types.
- The F-551-S/HEZ type is the silver version of the F-551/HEZ type.
- Ce manuel pour le service comprend les explications en français de réglage.
- Este manual de servicio trata del método ajuste escrito en español.

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The ▲ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The F-551/KUC, SD, HEZ, F-551-S/HEZ, F-551L/HE and HB types are the same as the F-X420L(BK)/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.							Remarks
		F-X420L (BK)/HE	F-551/KUC	F-551/SD	F-551L/HE	F-551L/HB	F-551/HEZ	F-551-S/ HEZ	
	TUNER assembly	AWZ1154	AWZ1417	AWZ1418	AWZ1424	AWZ1424	AWZ1427	AWZ1427	
	DISPLAY assembly	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	
	FE assembly (FTZ)	.....	.....	.....	.....	.....	AWB1003	AWB1003	
	Power knob (POWER)	AAD1055	AAD1152	AADI152	AAD1152	AAD1152	AAD1152	AAD1157	
	Display plate	AAK1126	AAK1253	AAK1253	AAK1253	AAK1253	AAK1253	AAK1253	
▲	AC power cord	ADG-071	ADG-088	ADG1015	ADG1021	ADG-063	ADG-094	ADG-094	
▲★★	Fuse (T400mA, FU301)	AEK-407	.....	.....	AEK-407	AEK-407	AEK-407	AEK-407	
▲★★	Fuse (T500mA, FU301)	.....	AEK-136	AEK-136	.....	.....	.....	.....
	Leg assembly	ABP-320	AEP-280	AEP-280	AEP-280	AEP-280	AEP-280	AEC-903	
	Front rear pad	AHA1025	.....	.....	.....	.....	.....	.....
	Packing case	AHD1113	AHD1227	AHD1227	AHD1226	AHD1226	AHD1227	AHD1228	
	Front panel base	AMB1089	AMB1180	AMB1180	AMB1180	AMB1180	AMB1180	AMB1193	
	Front panel	ANB1076	.....	.....	.....	.....	.....	.....
	Front panel assembly	.....	ANB1097	ANB1097	ANB1096	ANB1096	ANB1121	ANB1098	
	Bonnet	ANE-618	ANE1052	ANE1052	ANE1052	ANE1052	ANE1060	ANE1073	
	Operating instructions (English)	.....	ARB1061	ARB1061	.....	ARB1061	.....	.....
	(English/German/French /Italian)	ARB1024	.....	.....	ARE1048	.....	.....	.....
	(German)	.....	.....	.....	.....	.....	ARC1039	ARC1039	
	(Spanish)	.....	.....	ARC1055	.....	.....	.....	.....
	Push rivet	.....	AEP-319	AEP-319	AEP-319	AEP-319	AEP-319	AEP-319	
	Side pad	.....	AHA-341	AHA-341	AHA-341	AHA-341	AHA-341	AHA-341	
	Power joint	.....	AMR1098	AMR1098	AMR1098	AMR1098	AMR1098	AMR1098	
	Connection cord with Mini plug	.....	ADE-085	ADE-085	.....	.....	.....	.....
	FL filter	AAK1125	AAK1125	AAK1125	AAK1144	AAK1144	AAK1144	AAK1144	
	FM antenna assembly	.....	.....	.....	.....	.....	ADH1002	ADH1002	
	FM antenna	ADH-005	ADH-005	ADH-005	ADH-005	ADH-005	.....	.....

Note : The F-551-S/HEZ type is the silver color design type of the F-551/HEZ type.

Therefore, the F-551-S/HEZ type is the same circuit construction as the F-551/HEZ type.

2. ADJUSTMENTS

FH Tuner Section Adjustment

- Connect up as indicated in Fig.2-1.
- Press the FM key to set FM mode.
- CCTS switch OFF.
- Center the FM tuner section's trimmer and VR.

Note : Stereo modulation: Main 1kHz L+R $\pm 68.25\text{Hz}$ dev.
Pilot 19kHz $\pm 6.75\text{kHz}$ dev.

Step No.	FM SG (1kHz $\pm 75\text{kHz}$ dev.)		F-551 (F-551L, F-551-S) Frequency display	Adjustment	
	Frequency(MHz)	Level(dB)		Adjustment location	Specifications
1 *1	No input signal		108.0MHz	L105	Adjust so that TP4 is 10V($\pm 0.3\text{V}$).
2 *1	98.0	20-30	98.0MHz	T101	Set the output from TP2 of the tuner assembly to maximum level.
3	98.0	60 No modulation	98.0MHz	L109	Adjust so that it become 0V between TP5 and TP6.
4	No input signal		98.0MHz	VR101	Ground pin 6 of IC101 through a $220\mu\text{F}$ capacitor and adjust so that TP7 is 19kHz($\pm 50\text{Hz}$).
5	98.0	60 Stereo modulation (note)	98.0MHz	T101	Minimize distortion in both left and right channel outputs (adjust T101 to within $\pm 90^\circ$).

* 1 : For the F-551/HEZ type and F-551-S/HEZ type, proceed as shown in the chart below instead of using steps 1 and 2 in the chart above. Refer to Figs.2-4 and 2-5 for the adjustment locations.

1	①	90.0	20-30	90.0MHz	L702 *2, L703, T701	Set the output from TP2 of the tuner assembly to maximum level. (S.meter)
	②	106.0		106.0MHz	T701, L703, T701	
	③	90.0		90.0MHz	L702 *2	
	④	98.0		98.0MHz	T702	
	⑤	Repeat steps 1-② and 1-③ until both specification ratings are met.				

* 2 : The expression "adjust L702" found in the text means that the tuning coil is to be extended outwards with spatula (non metal) as shown in Fig.2-5.

AM (MW) Tuner Section Adjustment

- Connect up as indicated in Fig.2-2.
- Press the AM (MW) key to set AM (MW) mode.
- For the F-551/KUC type and SD type, set the FM/AM CHANNEL STEP switch (S801) to 100/10kHz. For all other types, set this switch to 50/9kHz. (Always turn off the power when making these settings.)
The value within brackets () in the section of adjustment method is the value when S801 is 100/10kHz.
- CCTS switch OFF.
- Center the MW tuner section's trimmer and VR.

Step No.	AM SG (400Hz, 30% modulation)		F-551 (F-551L, F-551-S) Frequency display	Adjustment	
	Frequency(kHz)	Level(dB)		Adjustment location	Specifications
1	No input signal		531kHz (530kHz)	L201	Set TP4 of tuner assembly to 1.3V($\pm 0.1V$).
2	1602kHz (1700kHz)		1602kHz (1700kHz)	TC202	Set TP4 of tuner assembly to 10.0V ($\pm 0.3V$).
3	Repeat steps 1 and 2 until both specification ratings are satisfied.				
4	603 (600)	40	603kHz (600kHz)	T201	Set the output from TP2 of the tuner assembly to maximum level.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Repeat steps 4 and 5 until both specification ratings are satisfied.				

AM (LW) Tuner Section Adjustment (F-551L/HE type and HB type only)

- Connect up as indicated in Fig.2-2.
- Press the AM (LW) key to set AM (LW) mode.
- CCTS switch OFF.
- Center the LW tuner section's trimmer and VR.

Step No.	AM SG (400Hz, 30% modulation)		F-551L Frequency display	Adjustment	
	Frequency(kHz)	Level(dB)		Adjustment location	Specifications
1	No input signal		281kHz	L202	Set TP4 of tuner assembly to 5.2V($\pm 0.1V$).
2	164	40	164kHz	T202	Set the output from TP2 of the tuner assembly to maximum level.
3	254	40	254kHz	TC203	
4	Repeat steps 2 and 3 until both specification ratings are satisfied.				

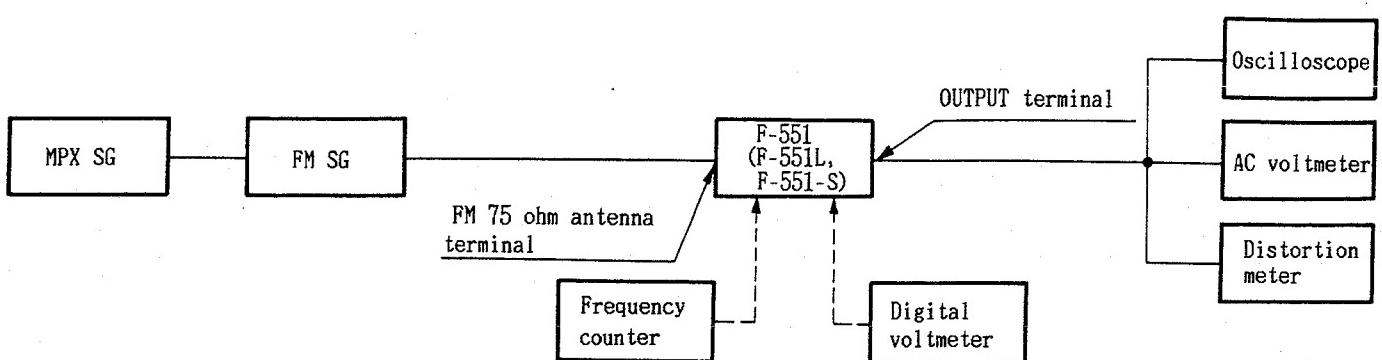


Fig. 2-1. FM adjustment connection diagram

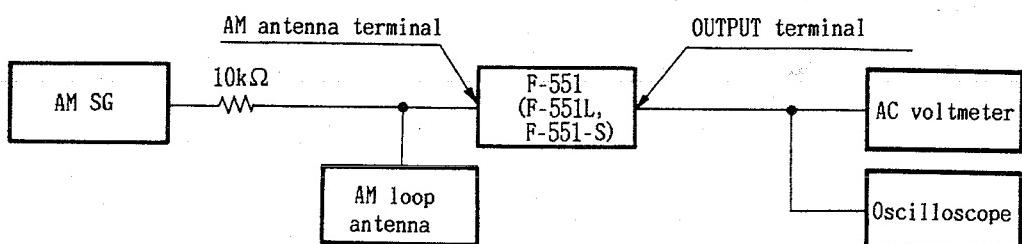


Fig. 2-2. AM adjustments connection diagram

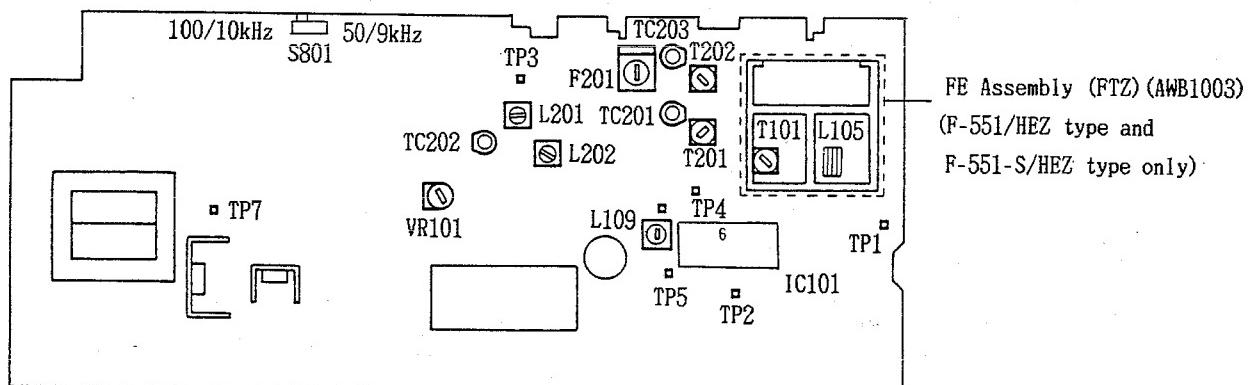


Fig. 2-3. Adjustment positions

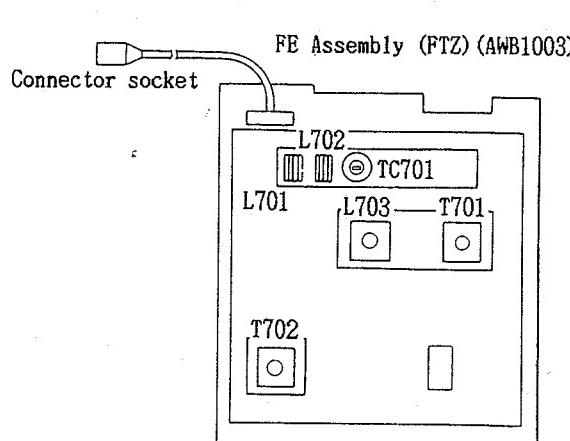


Fig. 2-4. Adjustment point of FE Assembly

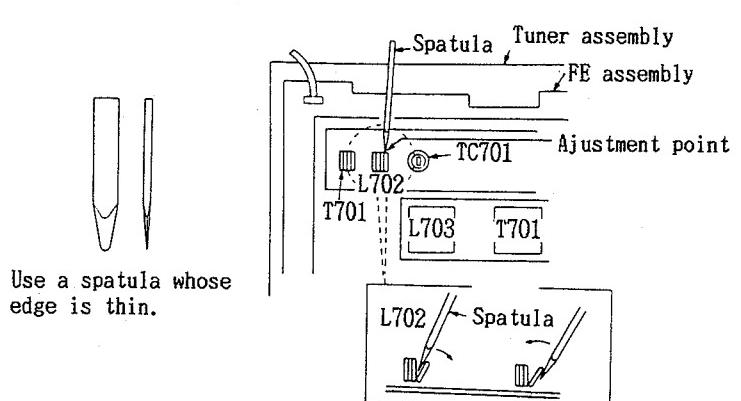


Fig. 2-5. Adjustment tuning coil L702

2. RÉGLAGE

Réglage de la partie syntoniseur FM

- Faire les raccordements comme indiqué en Fig.2-1.
- Enfoncer la touche FM pour régler en mode FM.
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner FM.

Note : Modulation stéréo: Principal 1kHz L + R \pm 68,25Hz dév.
Pilote 19kHz \pm 6,75kHz dév.

Etape N°	FM SG (1kHz \pm 75kHz dév.)		Affichage de fréquence syntonisée F-551 (F-551L, F-551-S)	Réglage	
	Fréquence(MHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1 *1	Pas de signal d'entrée		108,0MHz	L105	Ajuster de sorte que TP4 soit 10V($\pm 0,3V$).
2 *1	98,0	20-30	98,0MHz	T101	Régler la puissance de la fiche 1 de l'ensemble syntoniseur au niveau maximal.
3	98,0	60	98,0MHz	L109	Ajuster la bobine de sorte qu'elle se trouve à 0V entre TP5 et TP6.
4	Pas de signal d'entrée		98,0MHz	VR101	Mettre la broche 6 de IC101 à la masse par un condensateur de 220 μ F et régler de sorte que TP7 soit 19kHz ($\pm 50Hz$).
5	98,0	60	98,0MHz	T101	Réduire la distorsion dans les sorties des deux canaux droit et gauche (régler T101 à $\pm 90^\circ$).
Modulation stéréo (Note)					

* 1 : Pour le F-551/HEZ et le F-551-S/HEZ, procéder comme illustré sur le schéma ci-dessous au lieu de procéder aux étapes 1 et 2
ci-dessus. Se reporter aux Fig.2-4 et 2-5 pour l'emplacement des réglages.

1	①	90,0	20-30	90,0MHz	L702*2, L703, T701	Régler la sortie à partir de TP2 de l' assemblage du tuner au niveau maximum. (Masureur du S)
	②	106,0		106,0MHz	TC701, L703, T701	
	③	90,0		90,0MHz	L702 *2	
	④	98,0		98,0MHz	T702	
	⑤	Répéter les étapes 1-② et 1-③ jusqu'à ce que les deux spécifications du classement soient rencontrées.				

* 2 : L'expression "ajuster L702" trouvée dans l'explication signifie que le self d'accord doit être étendu de hors avec une spatule
(non métallique) comme montré dans la Fig.2-5.

Réglage de la partie syntoniseur AM (MW)

- Faire les raccordements comme indiqué en Fig.2-2.
- Enfoncer la touche AM (MW) pour régler en mode AM (MW).
- Pour le F-551/KUC et SD, régler l'interrupteur FM/AM CHANNEL STEP (S801) sur 100/10kHz. Pour les autres types, laisser l'interrupteur sur 50/9kHz (toujours couper l'alimentation lors de ces réglages). La valeur entre parenthèses dans la section de la "Méthode de réglage" représente la valeur lorsque S801 est 100/10kHz.
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner MW.

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-551 (F-551L, F-551-S)	Réglage	
	Fréquence(kHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée	531kHz (530kHz)	L201	Régler la TP4 de l'ensemble syntoniseur à 1,3V (±0,1V).	
2		1602kHz (1700kHz)			
3	Répéter les Etapes 1 et 2 jusqu'à ce que les taux nominaux préconisés soient atteints.				
4	603 (600)	40	603kHz (600kHz)	T201	Régler la puissance de la TP2 de l'ensemble syntoniseur au niveau maximal.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Répéter les Etapes 4 et 5 jusqu'à ce que les taux nominaux préconisés soient atteints.				

Réglage de la partie syntoniseur AM (LW) (F-551L/HE et HB uniquement)

- Faire les raccordements comme indiqué en Fig.2-2.
- Enfoncer la touche AM (LW) pour régler en mode AM (LW).
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner LW.

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-551L	Réglage	
	Fréquence(kHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée	281kHz	L202	Régler la TP4 de l'ensemble syntoniseur à 5,2V (±0,1V).	
2	164	40			
3	254	40	TC203	Régler la puissance de la TP2 de l'ensemble syntoniseur au niveau maximal.	
4	Répéter les Etapes 2 et 3 jusqu'à ce que les taux préconisés soient atteints.				

F-551, F-551-S, F-551L

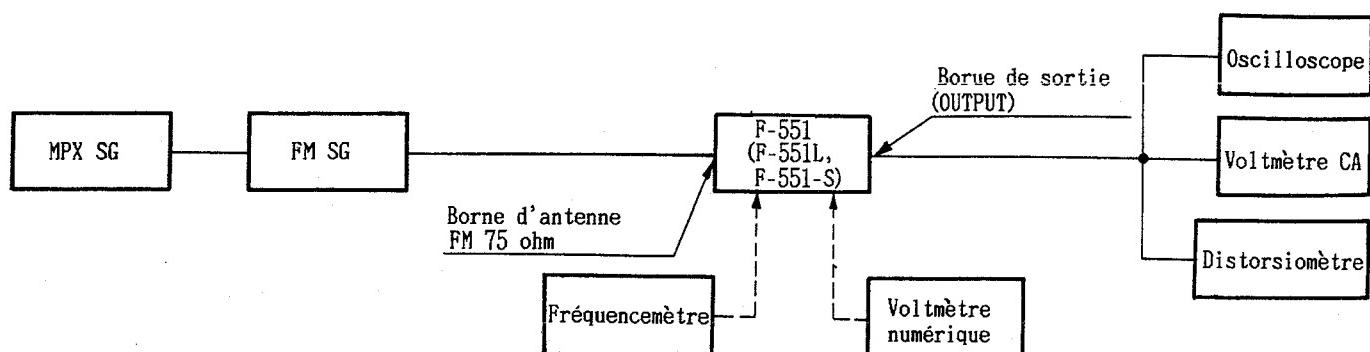


Fig.2-1. Diagramme de raccordement de réglage FM

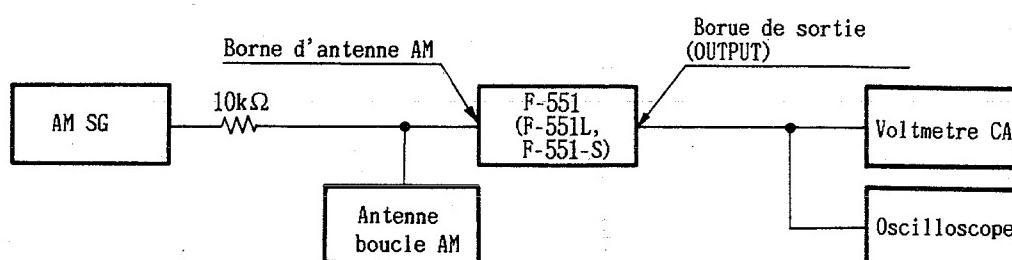


Fig.2-2. Diagramme de raccordement de réglage AM

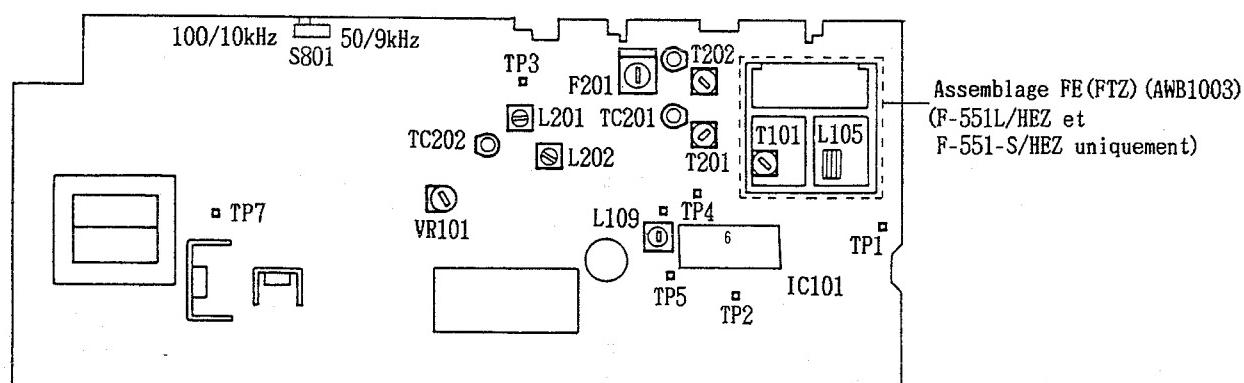


Fig.2-3. Positions de réglage

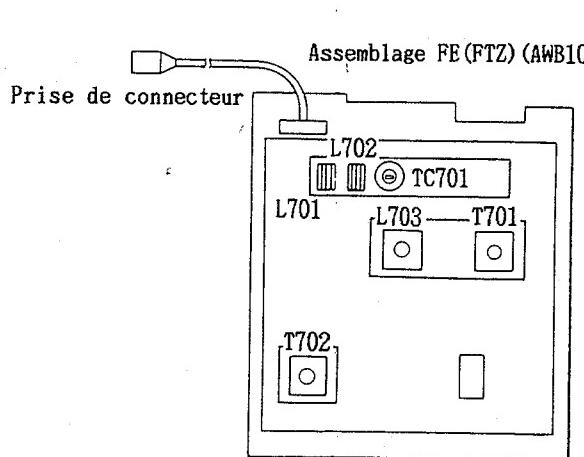


Fig.2-4. Point d'ajustement du l'assemblage FE

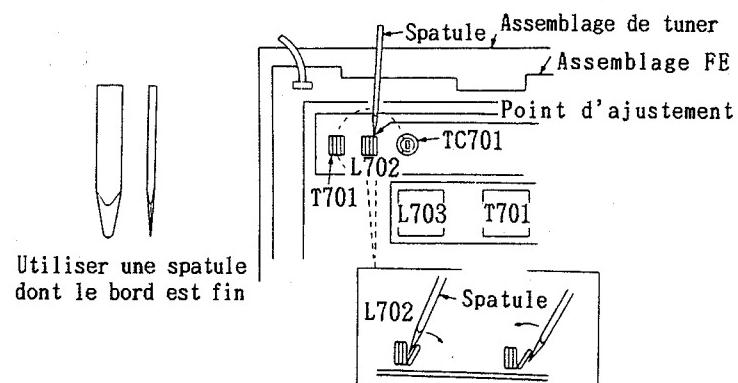


Fig.2-5. Réglage du self d'accord L702

2. AJUSTE

Ajuste de la sección del sintonizador de FM

- Conecte como es indicado en la Fig.2-1.
- Oprima la tecla de FM para fijar el modo de FM.
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de FM.

Nota : Modulación estereo: Principal 1kHz L+R $\pm 68,25\text{Hz}$ dev.
Piloto 19kHz $\pm 6,75\text{kHz}$ dev.

No. de paso	FM SG (1kHz $\pm 75\text{kHz}$ dev.)		Visualización de frecuencia sintonizada F-551 (F-551L, F-551-S)	Lugar de ajuste	Ajuste
	Frecuencia(MHz)	Nivel(dB)			Especificaciones
1 *1	No hay señal de entrada		108,0MHz	L105	Ajuste hasta obtener en TP4 una tensión de 10V ($\pm 0,3\text{V}$).
2 *1	98,0	20-30	98,0MHz	T101	Fije la salida de la patilla 1 del conjunto del sintonizador al máximo nivel.
3	98,0 Sin modulación	60	98,0MHz	L109	Ajuste de forma que la tensión entre TP5 y TP6 sea de 0V.
4	No hay señal de entrada		98,0MHz	VR101	Ponga a masa la patilla 6 de IC101 a través de un capacitor de $220\mu\text{F}$, y ajuste hasta obtener en TP7 una frecuencia de 19kHz($\pm 50\text{Hz}$).
5	98,0 Modulación estereo (Nota)	60	98,0MHz	T101	Reduzca la distorsión tanto en la salida del canal izquierdo como en la del derecho (ajuste T101 a dentro de $\pm 90^\circ$).

* 1 : Para los tipos F-551/HEZ y F-551-S/HEZ, realice lo indicado en la tabla siguiente en vez de emplear los pasos 1 y 2 de la tabla anterior. Con respecto a los lugares de ajuste, consulte las Fig.2-4 y 2-5.

1	①	90,0	20-30	90,0MHz	L702 * ² , L703, T701	Ajuste la salida de TP2 del conjunto del sintonizador al nivel máximo. (medidor de S.)
	②	106,0		106,0MHz	TC701, L703, T701	
	③	90,0		90,0MHz	L702 * ²	
	④	98,0		98,0MHz	T702	
	⑤	Repita los pasos 1-② y 1-③ hasta que se satisfagan los valores de las especificaciones.				

* 2 : La expresión "ajuste L702" encontrada significa que la bobina de sintonía tiene que extenderse hacia afuera con una espátula (no metálica) como se muestra en la Fig.2-5.

Ajuste de la sección del sintonizador de AM (MW)

- Conecte como es indicado en la Fig.2-2.
- Oprima la tecla AM (MW) para fijar el modo AM (MW).
- Para los tipos F-551/KUC y SD, ponga el conmutador FM/AM STEP CHANNEL (S801) en 100/10kHz. Para todos los demás tipos, ponga este conmutador en 50/9kHz. (Antes de realizar este ajuste, desconecte siempre la alimentación.) El valor entre paréntesis () de la sección del método de ajuste es el correspondiente cuando S801 está en 100/10kHz.
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de MW.

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-551 (F-551L, F-551-S)	Lugar de ajuste	Ajuste
	Frecuencia(kHz)	Nivel(dB)			Especificaciones
1	No hay señal de entrada	531kHz (530kHz)	F-551 (F-551L, F-551-S)	L201	Fije la TP4 del conjunto del sintonizador a 1,3V ($\pm 0,1V$).
2		1602kHz (1700kHz)		TC202	Fije la TP4 del conjunto del sintonizador a 10,0V ($\pm 0,3V$).
3	Repita los pasos 1 y 2 hasta que ambos valores nominales especificados sean satisfechos.				
4	603 (600)	40	603kHz (600kHz)	T201	Fije la salida de la TP2 del conjunto del sintonizador al máximo nivel.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Repita los pasos 4 y 5 hasta que ambos valores nominales especificados sean satisfechos.				

Ajuste de la sección del sintonizador de AM (LW) (Tipos F-551L/HE y HB solamente)

- Conecte como es indicado en la Fig.2-2.
- Oprima la tecla AM (LW) para fijar el modo AM (LW).
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de LW.

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-551L	Lugar de ajuste	Ajuste
	Frecuencia(kHz)	Nivel(dB)			Especificaciones
1	No hay señal de entrada	281kHz	F-551L	L202	Fije la TP4 del conjunto del sintonizador a 5,2V ($\pm 0,1V$).
2		164		T202	Fije la salida de la TP2 del conjunto del sintonizador al máximo nivel.
3	254	40	254kHz	TC203	
4	Repita los pasos 2 y 3 hasta que ambos valores nominales especificados sean satisfechos.				

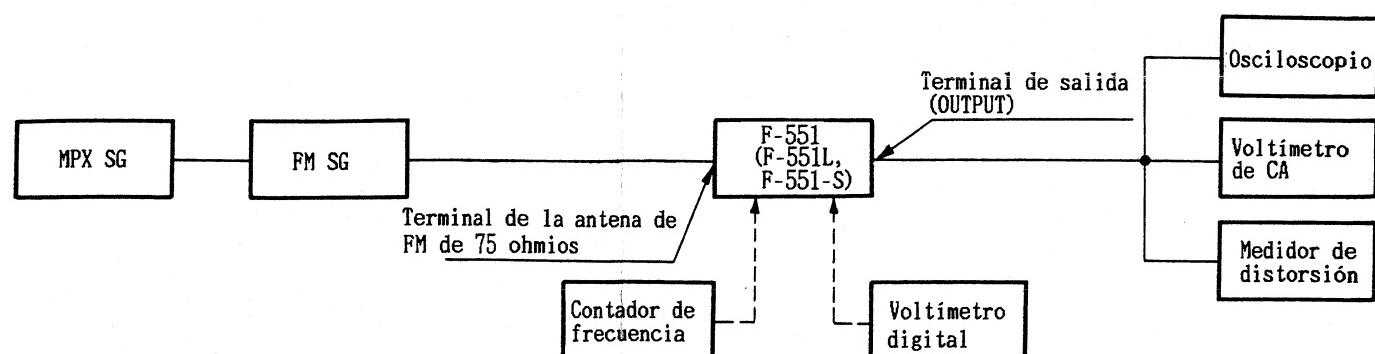


Fig.2-1. Diagramma de conexión de ajuste de FM

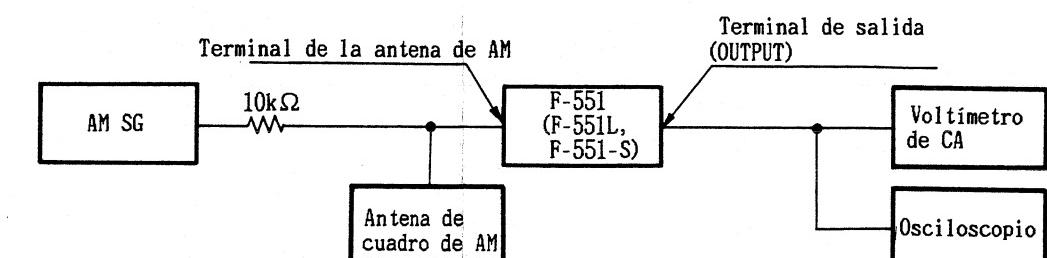


Fig.2-2. Diagramma de conexión de ajuste de AM

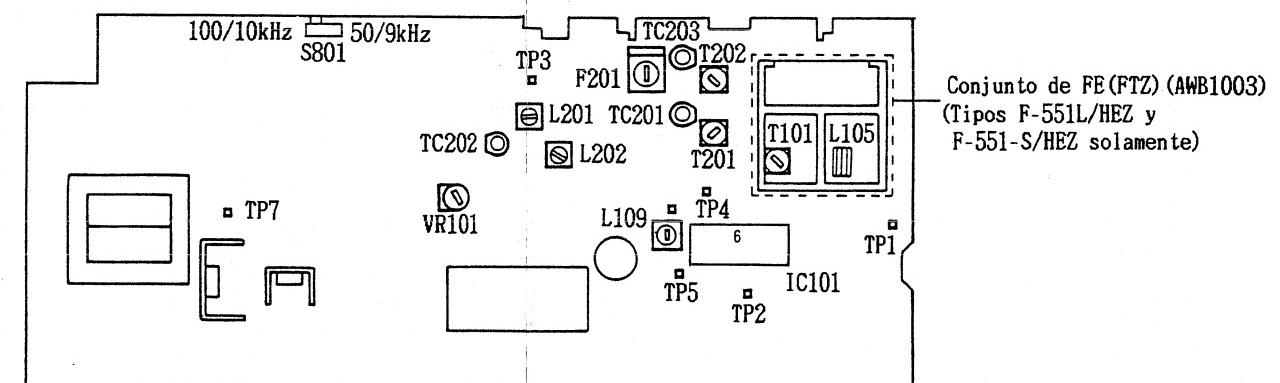
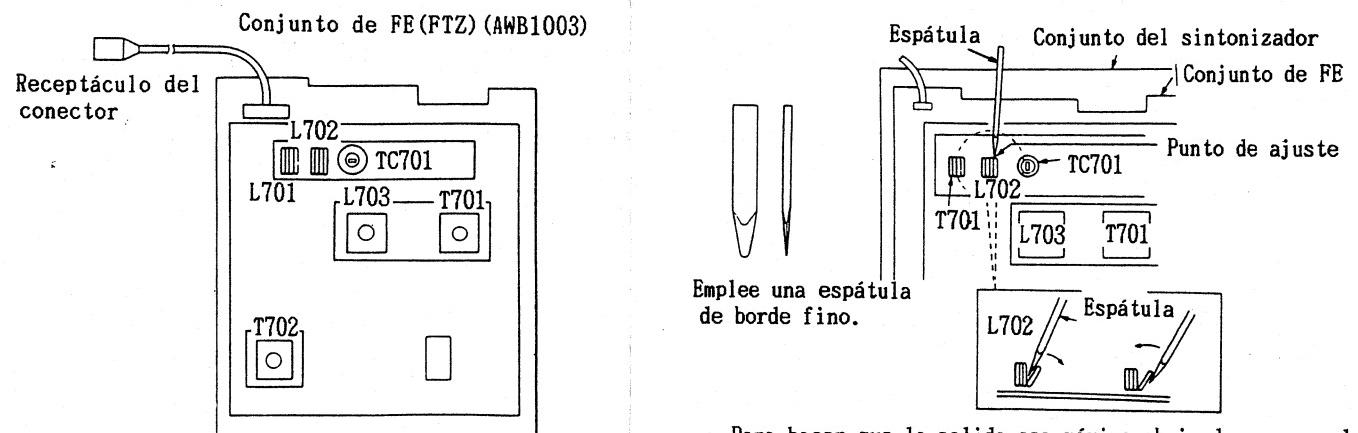


Fig.2-3. Puntos de ajuste



Para hacer que la salida sea máxima abriendo y cerrando la primera espira de la parte derecha de la bobina.

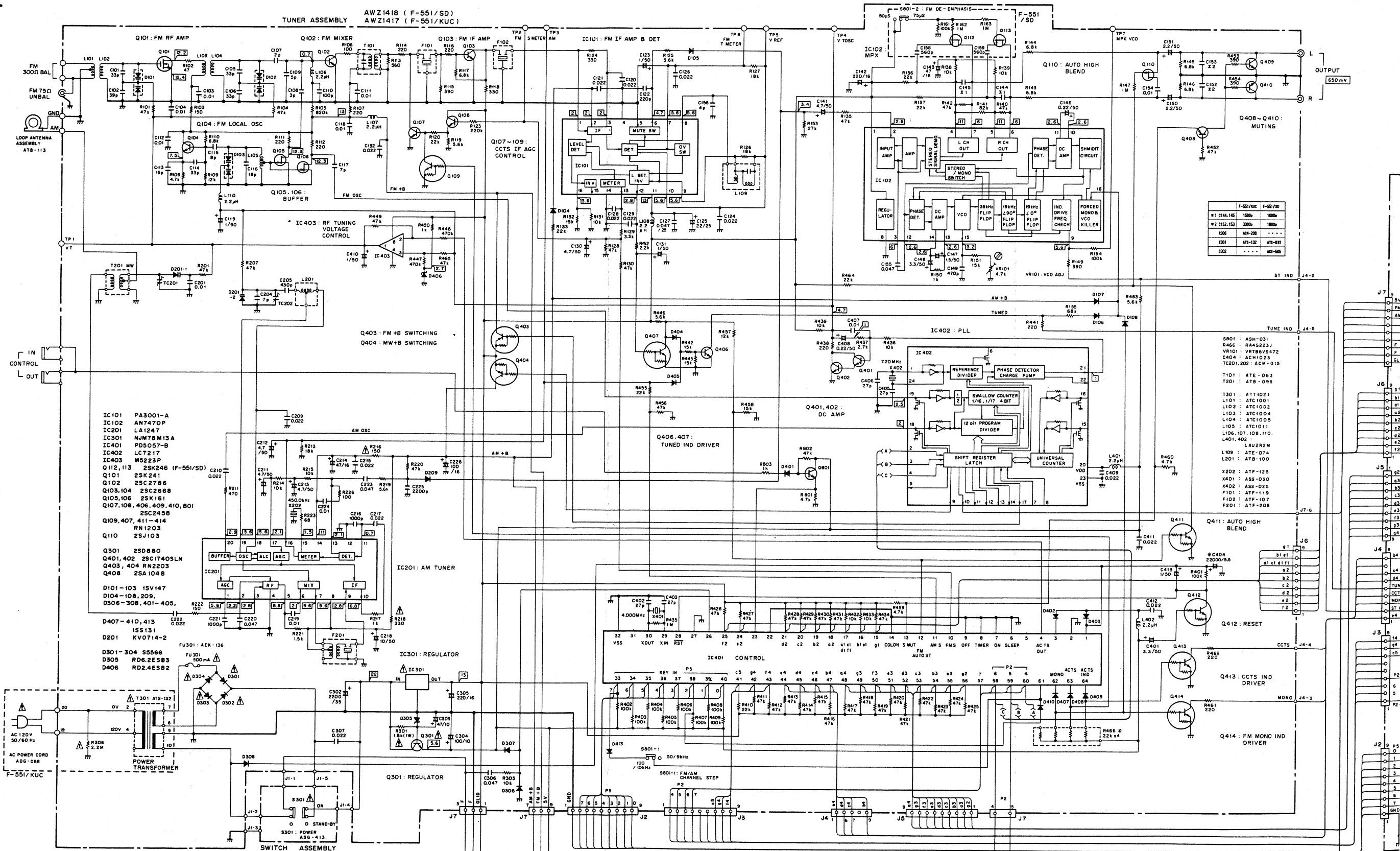
Fig.2-4. Punto de ajuste del conjunto de FE

Fig.2-5. Ajuste de la bobina de sintonía L702

3. FOR F-551/KUC AND SD TYPES

3.1 SCHEMATIC DIAGRAM

Note: This schematic diagram and P.C. boards are common used to the F-551/KUC and SD types.



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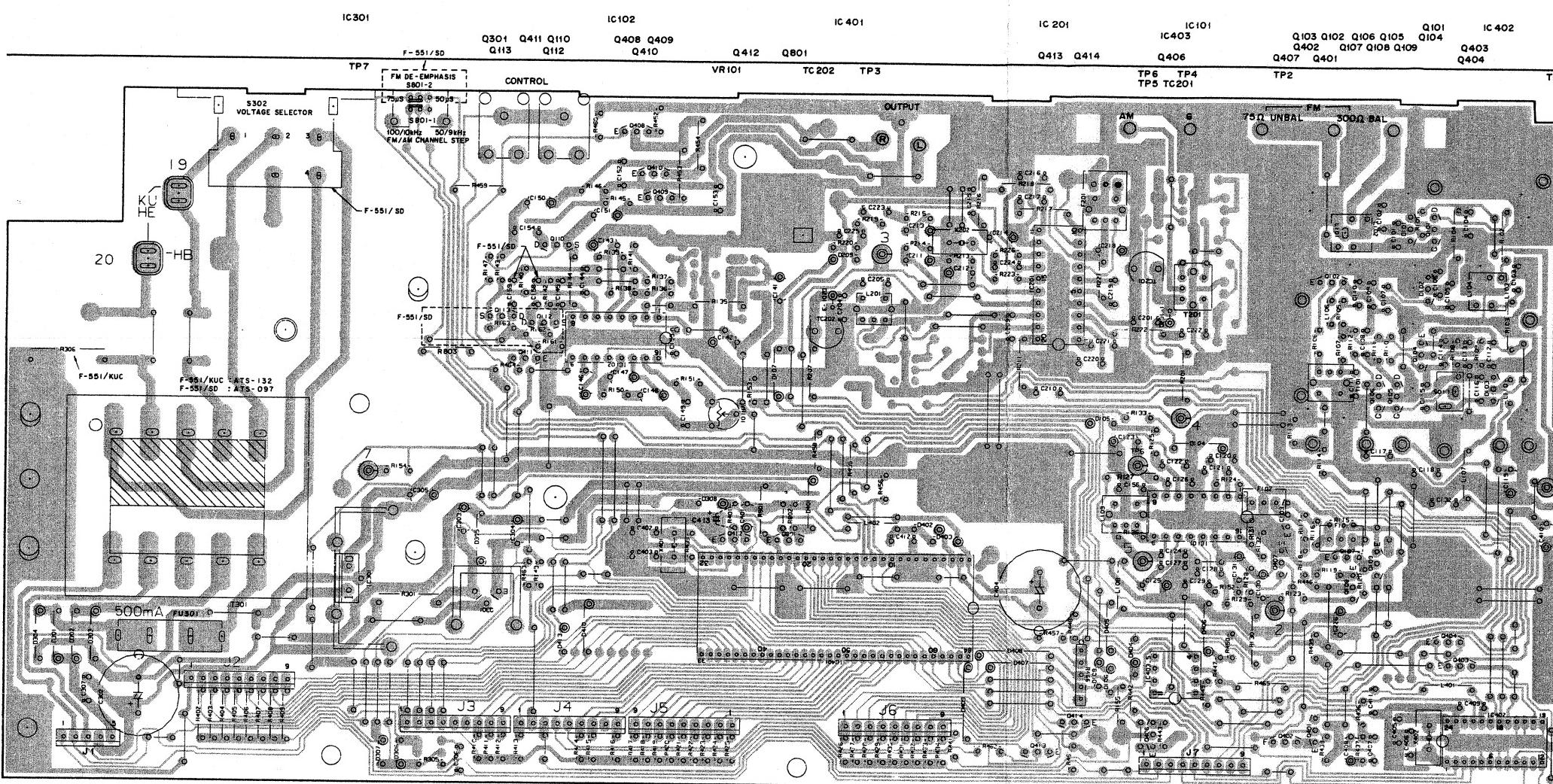
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F-551/KUC, SD

3.2 P.C. BOARDS PATTERN

Note : This schematic diagram and P.C.boards are common used to the F-551/KU and SD types.

A

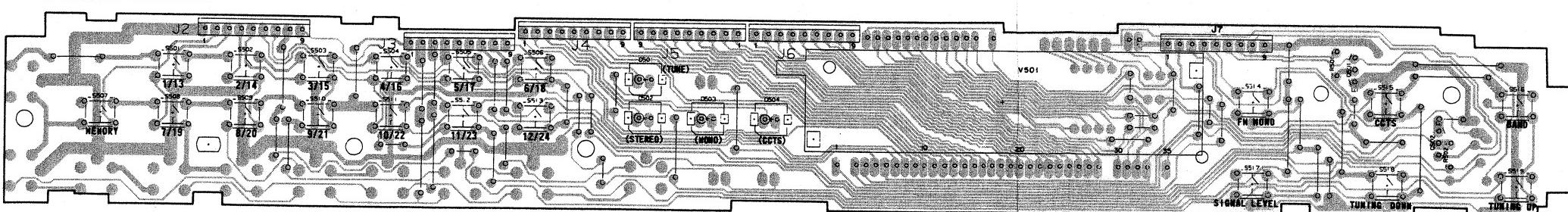


**TUNER ASSEMBLY (AWZ1417)(F-551/KUC)
(AWZ1418)(F-551/SD)**

C

SWITCH ASSEMBLY

D



1

2

三

6

16

NO

1. This P.C.B connection diagram is viewed from the parts mounted side.
 2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
	or	Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with shows negative terminal.
 4. The diode terminal marked with shows cathode side.
 5. The transistor terminal to which E is affixed shows the emitter.

3.3 ELECTRICAL PARTS LIST (FOR F-551/KUC TYPE)

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★ GENERALLY MOVES FASTER THAN ★
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56×10^1	561.....	RD1/4PS	5	6	J
47kΩ	47×10^3	473.....	RD1/4PS	4	7	J
0.5Ω	0R5.....		RN2H	0	5	K
1Ω	010.....		RS1P	0	1	K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562×10^1	5621.....	RN1/4SR	5	6	F
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Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1417

△★★	FU301 Fuse (500mA)	AEK-136
△	AC power cord	ADG-088
L1	Loop antenna assembly	ATB-113

SWITCH Assembly

Mark	Symbol & Description	Part No.
△★★	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

SEMICONDUCTORS	Mark	Symbol & Description	Part No.
★★ Q501, Q502		RN1203	
★ D502		AEL1009	
★ D501, D503, D504		AEL1015	

SWITCHES

Mark	Symbol & Description	Part No.
★★ S501-S519	Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
R501, R502		RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
★ V501	Fluorescent indicator tube	AAV-023

TUNER Assembly(AWZ1417)

SEMICONDUCTORS	Mark	Symbol & Description	Part No.
△★★	IC301		NJM78M13A

★★ IC102	AN7470P
★★ IC201	LA1247
★★ IC402	LC7217
★★ IC403	M5223P
△★★ IC301	PA3001-A
★★ IC101	PD5057-B
★★ IC401	RN1203
★★ Q109, Q407, Q411-Q414	RN2203
★★ Q403, Q404	2SA1048
★★ Q408	2SC1740SLN

★★ Q401, Q402	2SC2458
★★ Q107, Q108, Q406, Q409, Q410,	
Q801	
★★ Q103, Q104	2SC2668
★★ Q102	2SC2786

★★ Q301	2SD880
★★ Q110	2SJ103
★★ Q105, Q106	2SK161
★★ Q101	2SK241
★ D201	KV0714-2
★ D406	RD2.4ESB2
★ D305	RD6.2ESB3
△ ★ D301-D304	S5566
★ D104-D108, D209, D306-D308,	1SS131
D401-D405, D407-D410, D413	
★ D101-D103	1SV147

SWITCH

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★	S801 Slide switch (RM/AM CHANNEL STEP)	ASH-031		C125 C142, C305 C302 C148, C401 C130, C141, C211-C213	CEAS220M25 CEAS221M16 CEAS222M35 CEAS3R3M50 CEAS4R7M50

**COILS, FILTERS
AND TRANSFORMERS**

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
L201	AM OSC coil	ATB-100	C303	CEAS470M10	
L101	FM coil	ATC1001	C143, C214	CEAS470M16	
L102	FM coil	ATC1002	C216, C221	CKDYB102K50	
L105	FM coil	ATC1011	C144, C145	CKDYB152K50	
L103	FM coil	ATC1004	C152, C153	CKDYB322K50	
L104	FM coil	ATC1005	C103, C104, C111, C112, C118, C154, C201, C219, C224, C407	CKDYF103Z50	
L109	FM detector coil	ATE-074	C225	CKDYF222Z50	
L106-L108, L110, L401, L402	Axial inductor (2.2μH)		C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411,	CKDYF223Z50	
F102	RM ceramic filter	ATF-107	C412		
F101	FM ceramic filter	ATF-119	C155, C220, C223, C306	CKDYF473Z50	
F201	AM ceramic filter	ATF-208	C127	CKDXY473M25	
T201	AM antenna transformer	ATB-095	C205	CQSA431J50	
T101	FM matching transformer	ATE-063	C149	CQSA471J50	
▲ ★ T301	Power transformer	ATS-132			

CAPACITORS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
TC201, TC202	Trimmer	ACM-015	★ VR101	Semi-fixed (4.7kΩ)	VRTB6VS472
C404	(22000μF/5.5V)	ACH1023	▲ R306	Solid resistor (2.2M)	ACN-208
C156		CCDCH040C50	▲ R466	Resistor array (22k×4)	RA4S223J
C204		CCDCH070D50	▲ R216, R218		RD1/4PM □ □ □ J
C115		CCDCH080D50	▲ R301	Other resistors	RS1PMF182J
C113		CCDCH150J50			RD1/8PM □ □ □ J
C405, C406		CCDCH270J50			
C114		CCDCH330J50			
C101, C105, C106		CCDRH330J50	★ X402	Crystal resonator (7.20MHz)	ASS-025
C102		CCDRH390J50	★ X401	Ceramic resonator (4.000MHz)	ASS-030
C107		CCDSL020C50	★ X202	Ceramic resonator (450.0kHz)	ATF-125
C108		CCDSL030C50			
C109		CCDSL050C50	4P Termianl (ANTENNA)	AKA-017	
C117		CCDSL070D50	2P Pin jack	AKB-119	
C110		CCDSL101J50	Mini jack	AKN-207	
C122		CCDSL221J50			
C402, C403		CCDSL270J50			
C116		CCDTH180J50			
C146, C408		CEASR22M50			
C119, C123, C131, C410, C413		CEAS010M50			
C147		CEAS1R5M50			
C218		CEAS100M50			
C304		CEAS101M10			
C226		CEAS101M16			
C150, C151		CEAS2R2M50			

3.4 ELECTRICAL PARTS LIST (FOR F-551/SD TYPE)

NOTES:

- Parts without part number cannot be supplied.
 - Parts marked by “◎” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
 - ★★ GENERALLY MOVES FASTER THAN ★
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
- | | | | |
|------|----------------------|--------------|-----------------|
| 560Ω | 56 × 10 ¹ | 561..... | RD1/4PS 5 6 1 J |
| 47kΩ | 47 × 10 ³ | 473..... | RD1/4PS 4 7 3 J |
| 0.5Ω | 0R5..... | RN2H 0 R 5 K | |
| 1Ω | 010..... | RS1P 0 1 0 K | |

- Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
- | | | | |
|--------|-----------------------|-----------|-------------------|
| 5.62kΩ | 562 × 10 ³ | 5621..... | RN1/4SR 5 6 2 1 F |
|--------|-----------------------|-----------|-------------------|

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1418
△★★	FU301 Fuse (500mA)	AEK-136
△	AC power cord	ADG1015

SWITCH Assembly

Mark	Symbol & Description	Part No.
△★★	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

SEMICONDUCTORS	Mark	Symbol & Description	Part No.
★★ Q501, Q502		RN1203	
★ D502		AEL1009	
★ D501, D503, D504		AEL1015	

SWITCHES

Mark	Symbol & Description	Part No.
★★ S501-S519	Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
R501, R502		RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
★ V501	Fluorescent indicator tube	AAV-023

TUNER Assembly(AWZ1418)

SEMICONDUCTORS	Mark	Symbol & Description	Part No.
★★ IC102			AN7470P
★★ IC201			LA1247
★★ IC402			LC7217
★★ IC403			M5223P
△★★ IC301			NJM78M13A
★★ IC101			PA3001-A
★★ IC401			PD5057-B
★★ Q109, Q407, Q411-Q414			RN1203
★★ Q403, Q404			RN2203
★★ Q408			2SA1048
★★ Q401, Q402			2SC1740SLN
★★ Q107, Q108, Q406, Q409, Q410,			2SC2458
Q801			
★★ Q103, Q104			2SC2668
★★ Q102			2SC2786
★★ Q301			2SD880
★★ Q110			2SJ103
★★ Q105, Q106			2SK161
★★ Q101			2SK241
★★ Q112, Q113			2SK246
★ D201			KV0714-2
★ D406			RD2.4ESB2
★ D305			RD6.2ESB3
△ ★ D301-D304			S5566
★ D104-D108, D209, D306-D308,			1SS131
D401-D405, D407-D410, D413			
★ D101-D103			1SV147

SWITCHES	Mark	Symbol & Description	Part No.
△★★ S302 Line voltage selector (110V, 120-127V, 220V, 240V)			AKX-505
★★ S801 Slide switch (FM/AM CHANNEL STEP, FM DE-EMPHASIS)			ASH-031

**COILS, FILTERS
AND TRANSFORMERS**

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
L201	AM OSC coil	ATB-100	C303		CEAS470M10
L101	FM coil	ATC1001	C143, C214		CEAS470M16
L102	FM coil	ATC1002	C144, C145, C216, C221		CKDYB102K50
L103	FM coil	ATC1004	C152, C153		CKDYB182K50
L104	FM coil	ATC1005	C158, C159		CKDYB561K50
L105	FM coil	ATC1011	C103, C104, C111, C112, C118,		CKDYF103Z50
L109	FM detector coil	ATE-074	C154, C201, C219, C224, C407		
L106—L108, L110, L401, L402	Axial inductor (2.2 μ H)	LAU2R2M	C225		CKDYP222Z50
F102	FM ceramic filter	ATF-107	C120, C121, C124, C126, C128,		CKDYP223Z50
F101	FM ceramic filter	ATF-119	C129, C132, C209, C210, C215,		
F201	AM ceramic filter	ATF-208	C217, C222, C307, C409, C411,		
T201	AM antenna transformer	ATB-095	C412		
T101	FM matching transformer	ATE-063	C155, C220, C223, C306		CKDYP473Z50
▲ ★ T301	Power transformer	ATS-097	C127		CKDYX473M25
			C205		CQSA431J50
			C149		CQSA471J50

CAPACITORS

Mark	Symbol & Description	Part No.
TC201, TC202	Trimmer	ACM-015
C404	(22000 μ F/5.5V)	ACH1023
C156		CCDCH040C50
C204		CCDCH070D50
C115		CCDCH080D50
C113		CCDCH150J50
C405, C406		CCDCH270J50
C114		CCDCH330J50
C101, C105, C106		CCDRH330J50
C102		CCDRH390J50
C107		CCDSL020C50
C108		CCDSL030C50
C109		CCDSL050C50
C117		CCDSL070D50
C110		CCDSL101J50
C122		CCDSL221J50
C402, C403		CCDSL270J50
C116		CCDTH180J50
C146, C408		CEASR22M50
C119, C123, C131, C410, C413		CEAS010M50
C147		CEAS1R5M50
C218		CEAS100M50
C304		CEAS101M10
C226		CEAS101M16
C150, C151		CEAS2R2M50
C125		CEAS220M25
C142, C305		CEAS221M16
C302		CEAS222M35
C148, C401		CEAS3R3M50
C130, C141, C211—C213		CEAS4R7M50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7k Ω)	VRTB6VS472
	R466 Resistor array (22k \times 4)	RA4S223J
▲	R216, R218	RD1/4PM □ □ J
▲	R301	RS1PMF182J
	Other resistors	RD1/8PM □ □ J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	4P Terminal (ANTENNA)	AKA-017
	2P Pin jack	AKB-119
	Mini jack	AKN-207

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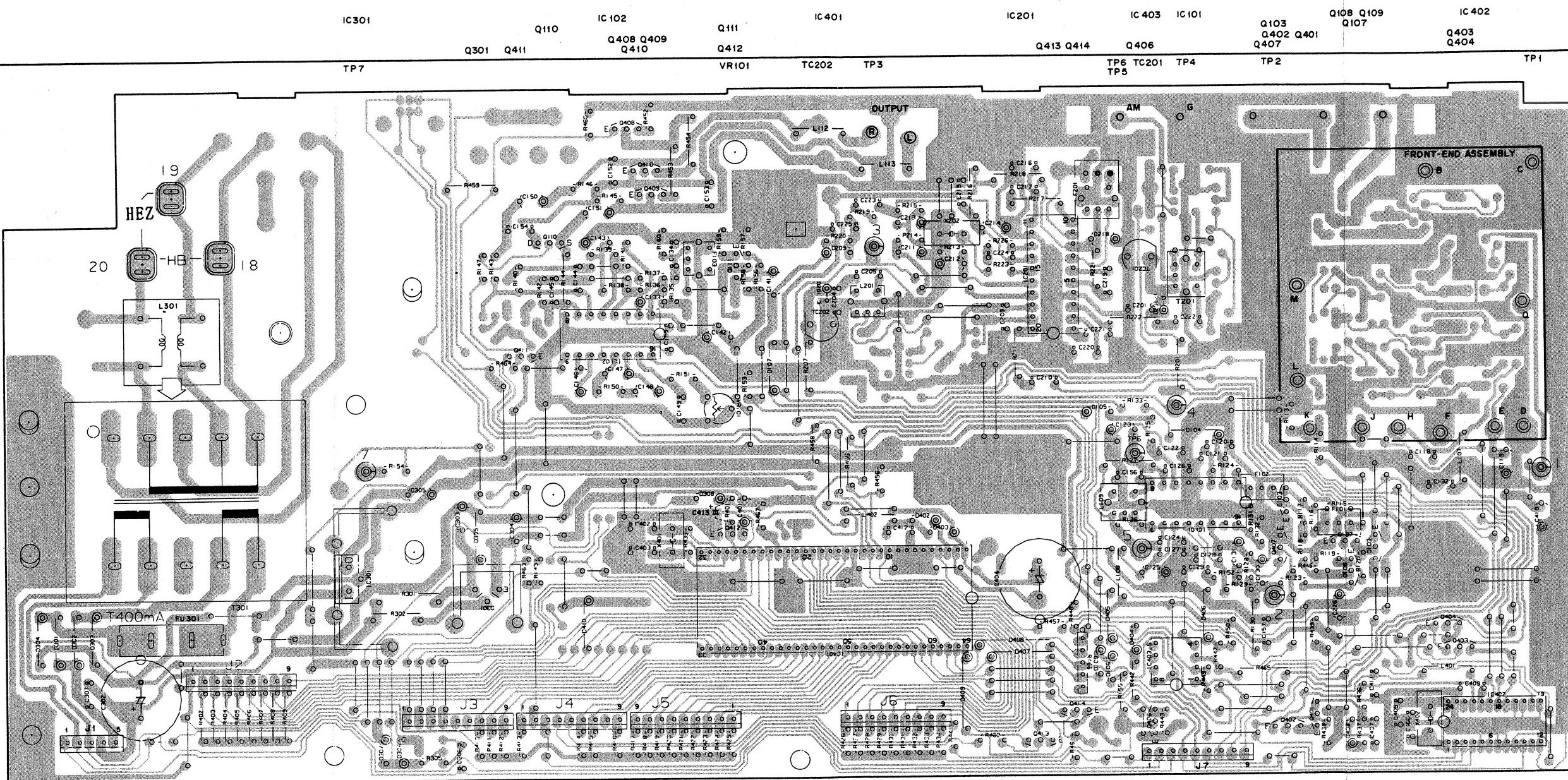
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4. FOR F-551/HEZ AND F-551-S/HEZ TYPES

4.1 P.C. BOARDS PATTERN

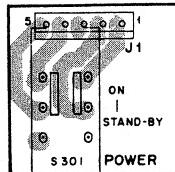
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FE ASSEMBLY (

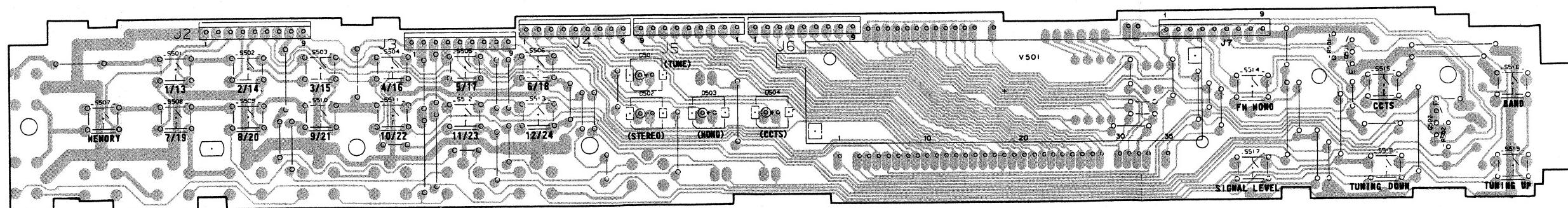


TUNER ASSEMBLY (AWZ1427)

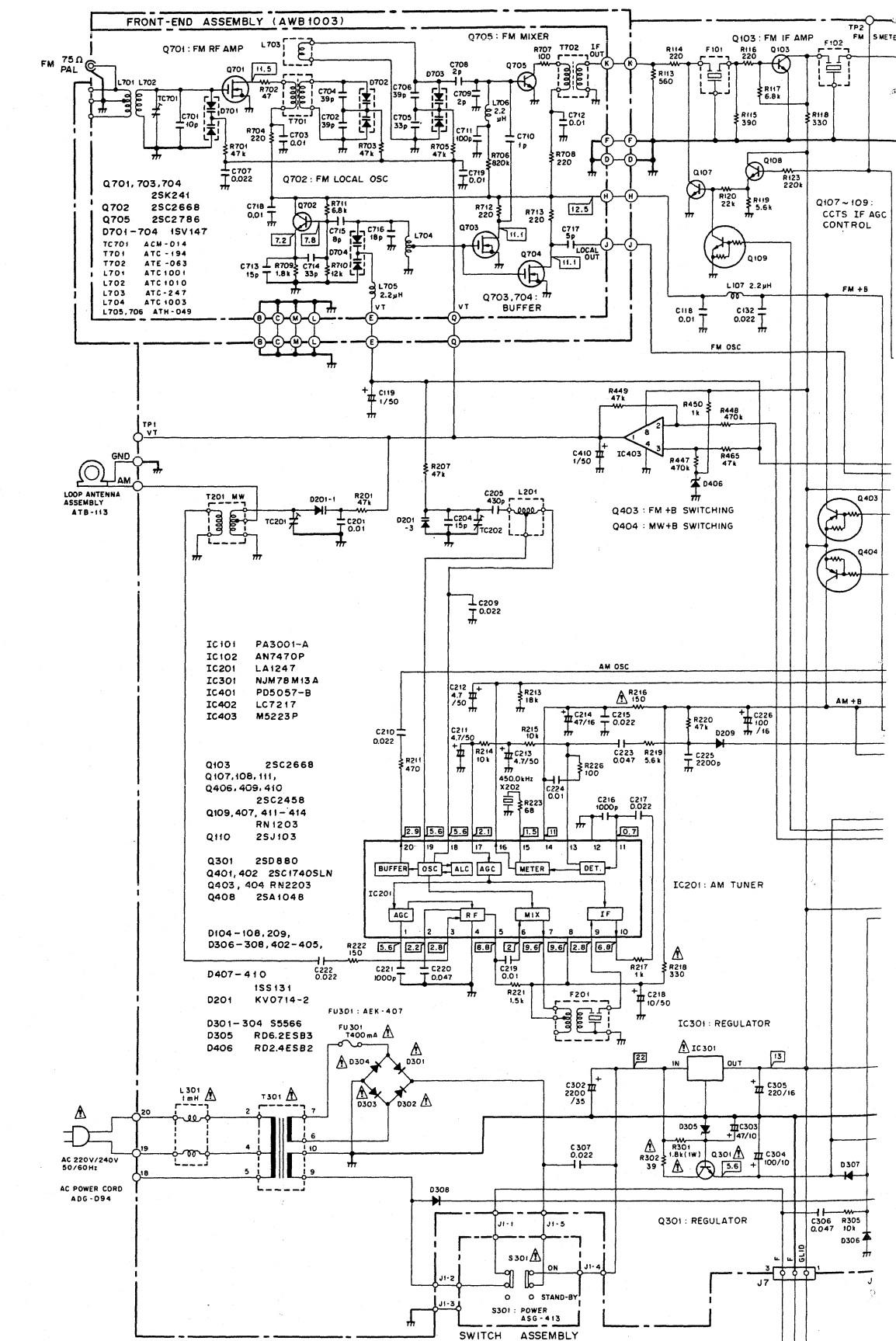
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SWITCH ASSEMBLY

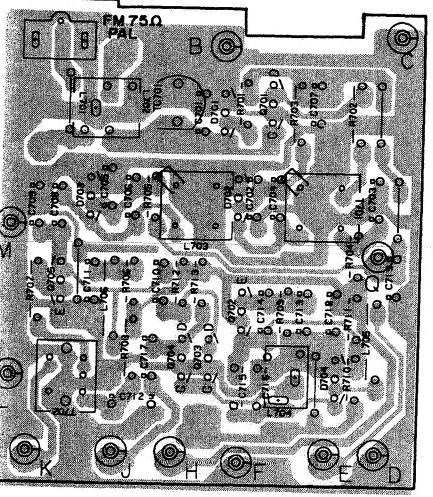


4.2 SCHEMATIC DIAGRAM



A A
B B
C C
D D

FE ASSEMBLY (FTZ)(AWB1003)



NOTE

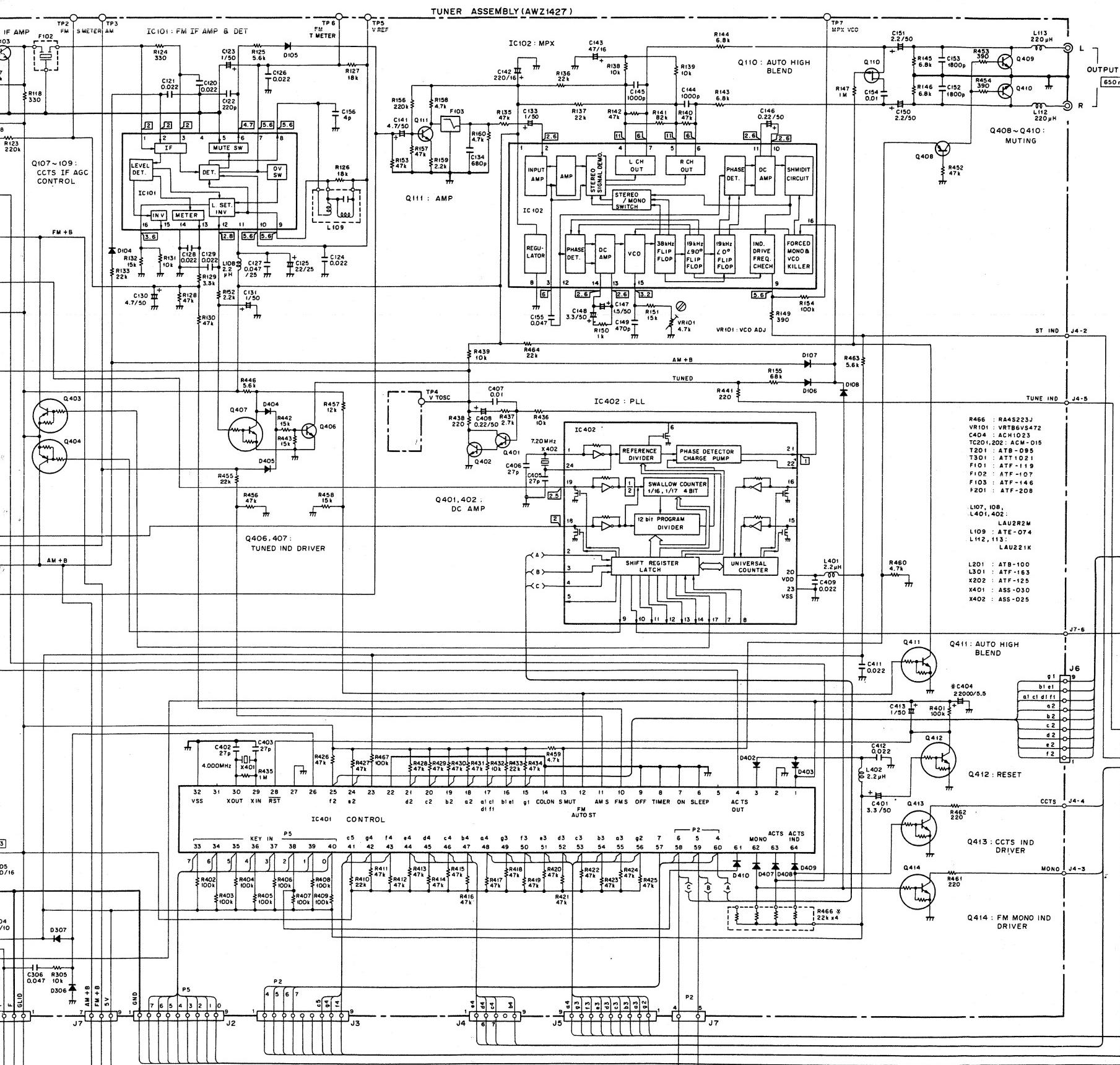
- This P.C.B connection diagram is viewed from the parts mounted side.
- The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E O 0504	E O or E O	Transistor
Q215	E O or E O	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513	Capacitor (Polarity)
C518	C518	Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

- The capacitor terminal marked with (double circles) shows negative terminal.
- The diode terminal marked with (double circles) shows cathode side.
- The transistor terminal to which E is affixed shows the emitter.



4.3 ELECTRICAL PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
 - Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56×10^1	561.....	RDI/4PS	5	6	J
47kΩ	47×10^3	473.....	RDI/4PS	4	7	J
0.5Ω	0R5.....	RN2H	5	K		
1Ω	010.....	RS1P	1	K		

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562×10^1	5621.....	RNI/4SR	5	6	2	F
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Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1427
△★★	FU301 Fuse (T400mA)	AEK-407
△	AC power cord	ADG-094
L1	Loop antenna assembly	ATB-113

SWITCH Assembly

Mark	Symbol & Description	Part No.
△★★	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

Mark	Symbol & Description	Part No.
★★	Q501, Q502	RN1203
★	D502	AEL1009
★	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
★★	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

COILS, FILTERS
AND TRANSFORMERS

Mark	Symbol & Description	Part No.
△	L201 AM OSC coil	ATB-100
	L109 FM detector coil	ATE-074
	L301 Line filter (1mH)	ATF-163
	L107, L108, L401, L402 Axial inductor (2.2 μH)	LAU2R2M
	L112, L113 Axial inductor (220 μH)	LAU221K
	F102 FM ceramic filter	ATF-107
	F101 FM ceramic filter	ATF-119
	F103 Beat eliminate filter	ATF-146
	F201 AM ceramic filter	ATF-208
	T201 AM antenna transformer	ATB-095
△ ★	T301 Power transformer	ATT1021

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201, TC202 Trimmer	ACM-015
	C404 (22000 μF/5.5V)	ACH1023
	C156	CCDCH040C50
	C204	CCDCH150J50
	C405, C406	CCDCH270J50
	C122	CCDSL221J50
	C402, C403	CCDSL270J50
	C146, C408	CEASR22M50
	C119, C123, C131, C410, C413	CEAS010M50
	C147	CEAS1R5M50
	C133, C218	CEAS100M50
	C304	CEAS101M10
	C226	CEAS101M16
	C150, C151	CEAS2R2M50
	C125	CEAS220M25
	C142, C305	CEAS221M16
	C302	CEAS222M35
	C148, C401	CEAS3R3M50
	C130, C141, C211-C213	CEAS4R7M50
	C303	CEAS470M10
	C143, C214	CEAS470M16
	C144, C145, C216, C221	CKDYB102K50
	C152, C153	CKDYB182K50
	C134	CKDYB681K50
	C118, C154, C157, C201, C219, C224, C407	CKDYF103Z50
	C225	CKDYF222Z50
	C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411, C412	CKDYF223Z50
	2SJ103	C155, C220, C223, C306
	2SD880	C127
	RD2.4ESB2	C205
	RD6.2ESB3	C149
	S5566	CQSA431J50
	1SS131	CQSA471J50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7kΩ)	VRTB6VS472
	R466 Resistor array (22k×4)	RA4S223J
△	R216, R218	RD1/4PM□□J
△	R302	RFA1/4PL390J
△	R301	RS1PMF182J
	Other resistors	RD1/8PM□□J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	Terminal (ANTENNA)	AKA1004
	2P Pin jack	AKB-119
	FE assembly (FTZ)	AWB1003

FE Assembly (FTZ)(AWB1003)

**NOTE ; This FE Assembly (FTZ)(AWB1003) is part of
TUNER Assembly (AWZ1427).**

SEMICONDUCTORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
★★	Q702	2SC2668
★★	Q705	2SC2786
★★	Q701, Q703, Q704	2SK241
★	D701-D704	1SV147

COILS AND TRANSFORMERS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
L703	FM RF coil	ATC-247
L701	FM coil	ATC1001
L704	FM coil	ATC1003
L702	FM coil	ATC1010
L705, L706	Inductor (2.2μH)	ATH-049
T701	FM RF transformer	ATC-194
T702	FM matching transformer	ATE-063

CAPACITORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
TC701		ACM-014
C715		CCDCH080D50
C713		CCDCH150J50
C714		CCDCH330J50
C701		CCDRH100D50
C705		CCDRH330J50
C702, C704, C706		CCDRH390J50
C710		CCDSL010C50
C708, C709		CCDSL020C50
C717		CCDSL050C50
C711		CCDSL101J50
C716		CCDTH180J50
C703, C712, C718, C719		CKDYF103Z50
C707		CKDYF223Z50

RESISTORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
A11	resistors	RD1/8PM□□□J

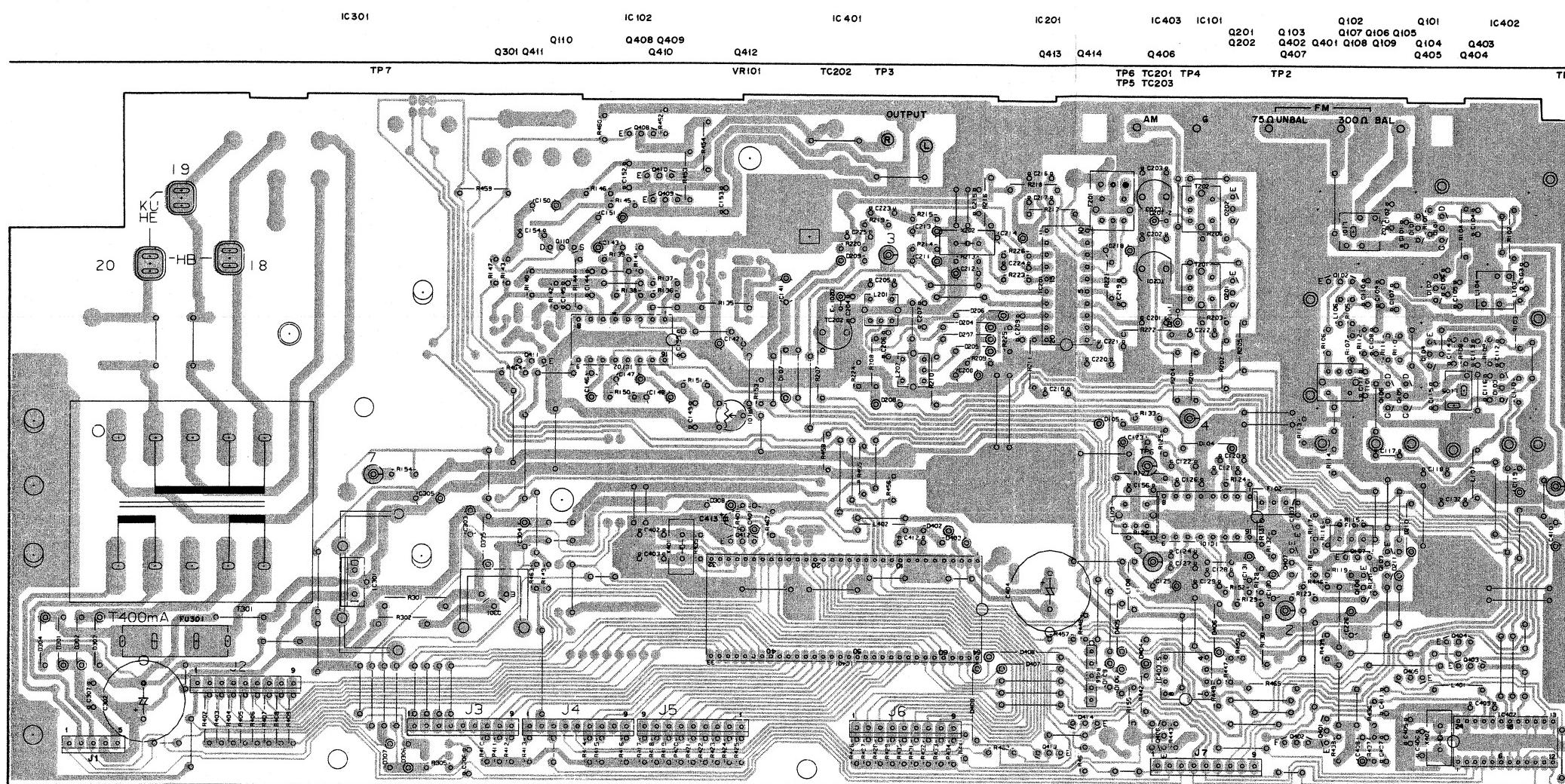
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5. FOR F-551L/HE AND HB TYPES

5.1 P.C. BOARDS PATTERN

A



TUNER ASSEMBLY (AWZ1424)

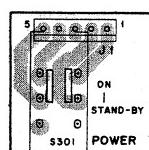
A

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E 0 0 0	E 0 0 0 or E 0 0 0	Transistor
— 0 215 —	— 0 215 — or — 0 215 —	Radiator type transistor
○ D203 —	— D203 —	Diode
— R237 —	— R237 —	Resistor
○ C513 ○	— H + —	Capacitor (Polarity)
○ C518 ○	— H —	Capacitor (Non-polarity)

B

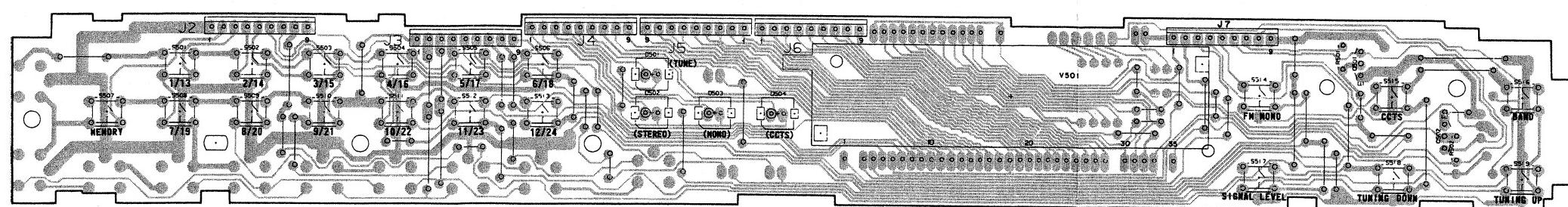


SWITCH ASSEMBLY

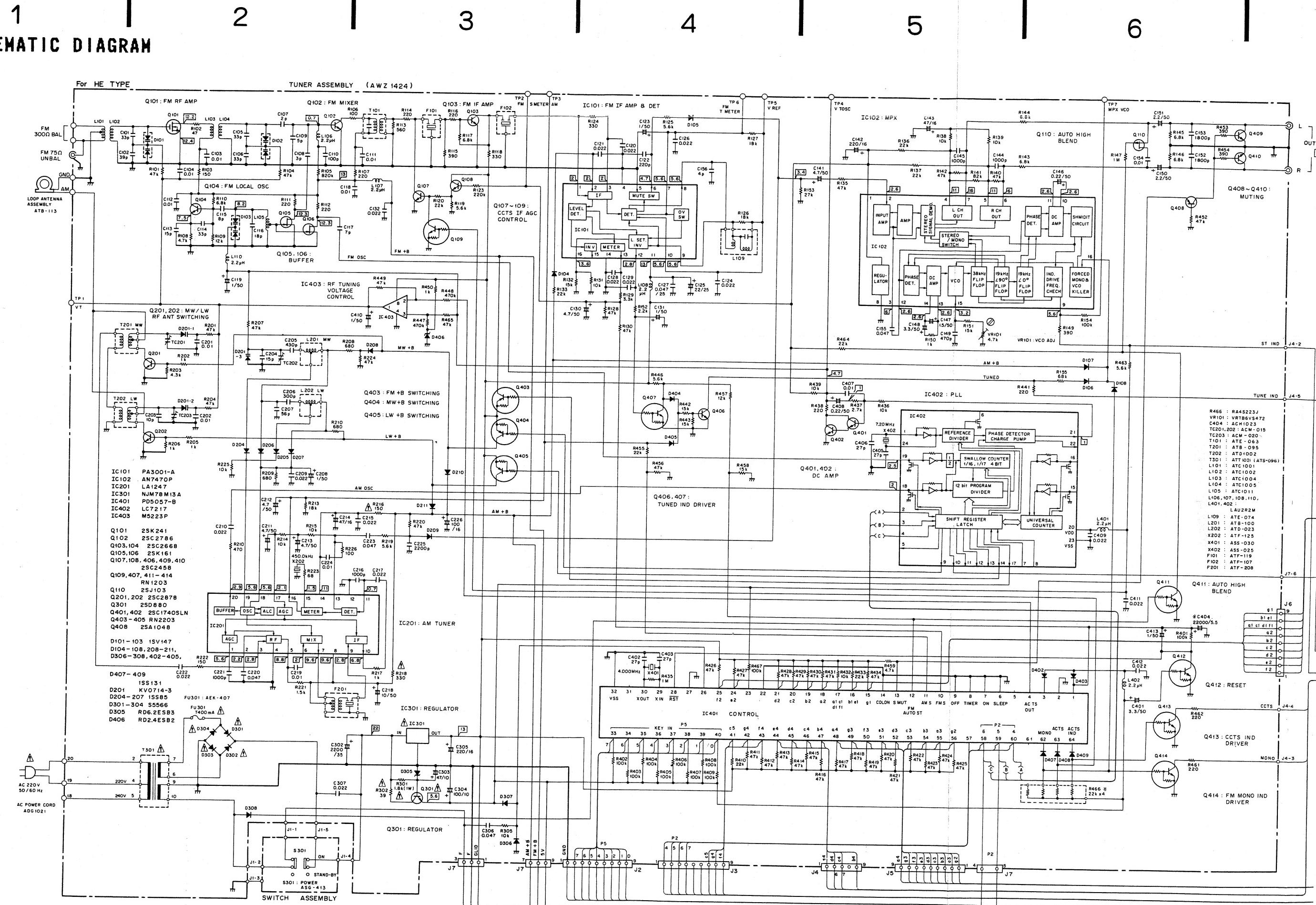
C

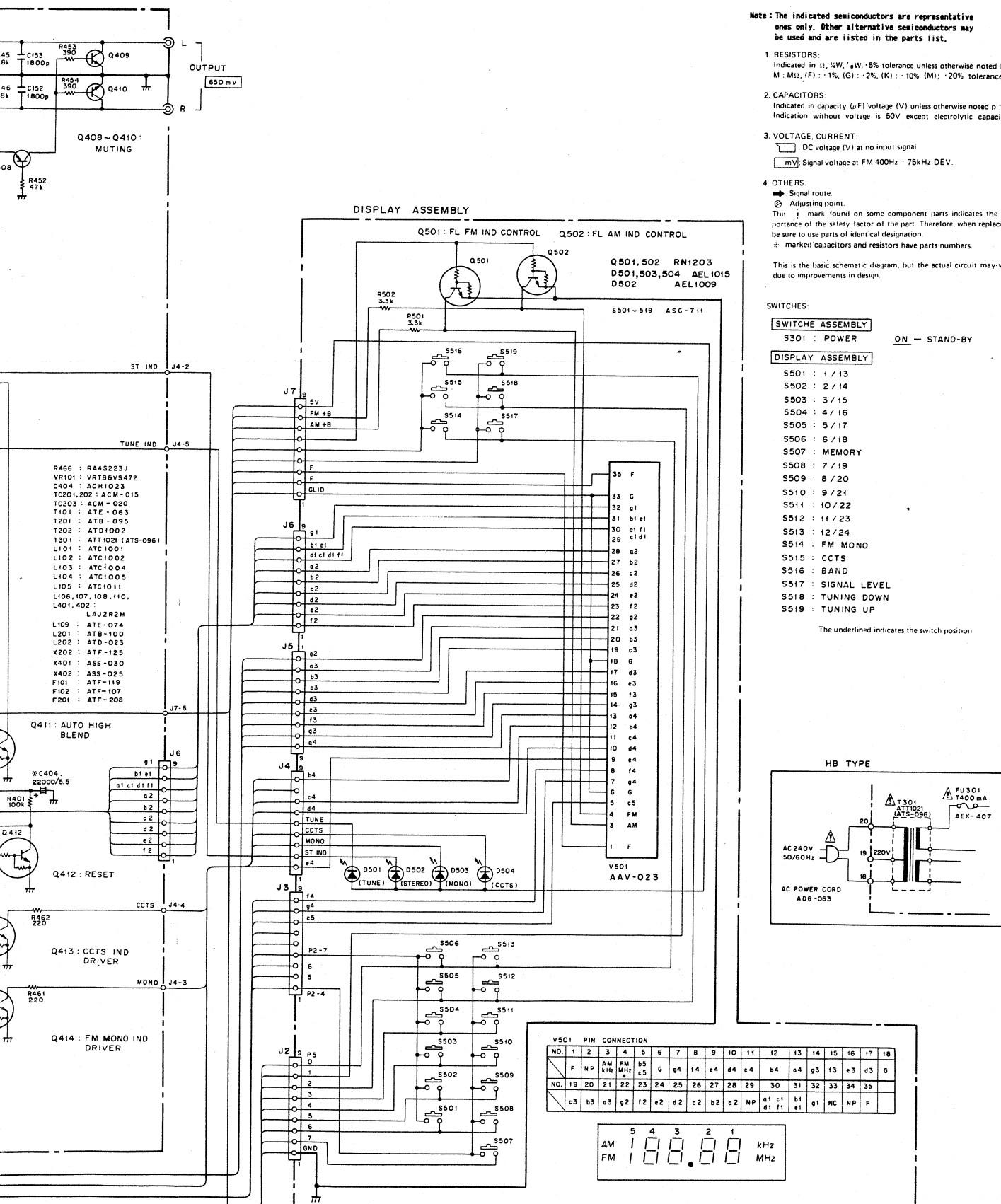
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

D



5.2 SCHEMATIC DIAGRAM





5.3 ELECTRICAL PARTS LIST

A

- NOTES:**
- Parts without part number cannot be supplied.
 - Parts marked by “ \bullet ” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - For your parts Stock Control, the fast moving items are indicated with the marks $\star\star$ and \star .
 - $\star\star$ GENERALLY MOVES FASTER THAN \star
 - This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by $J = 5\%$, and $K = 10\%$).
 560 Ω 56×10^1 561..... RD1/4PS \square \square \square J
 47k Ω 47×10^3 473..... RD1/4PS \square \square \square J
 0.5 Ω 0R5..... RN2H \square \square \square K
 1 Ω 010..... RS1P \square \square \square K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
 5.62k Ω 562×10^1 5621..... RN1/4SR \square \square \square F

Note: This electrical parts list is common used to F-551L/HE and HB types.

B

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1424
$\triangle\star\star$	FU301 Fuse (T400mA)	AEK-407
\triangle	AC power cord (HE type)	ADG1021
\triangle	AC power cord (HB type)	ADG-063
L1	Loop antenna assembly	ATB-113

SWITCH Assembly

Mark	Symbol & Description	Part No.
$\triangle\star\star$	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

Mark	Symbol & Description	Part No.
$\star\star$	Q501, Q502	RN1203
\star	D502	AEL1009
\star	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
$\star\star$	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
R501, R502		RD1/8PM332J

OTHERS	Mark	Symbol & Description	Part No.
\star	V501	Fluorescent indicator tube	AAV-023
$\triangle\star\star$	TUNER Assembly(AWZ1424)		
$\triangle\star\star$	SEMICONDUCTORS		
$\triangle\star\star$	IC102		AN7470P
$\star\star$	IC201		LA1247
$\star\star$	IC402		LC7217
$\star\star$	IC403		M5223P
$\triangle\star\star$	IC301		NJM78M13A
$\star\star$	IC101		PA3001-A
$\star\star$	IC401		PD5057-B
$\star\star$	Q109, Q407, Q411-Q414		RN1203
$\star\star$	Q403-Q405		RN2203
$\star\star$	Q408		2SA1048
$\star\star$	Q401, Q402		2SC1740SLN
$\star\star$	Q107, Q108, Q406, Q409, Q410		2SC2458
$\star\star$	Q103, Q104		2SC2668
$\star\star$	Q102		2SC2786
$\star\star$	Q201, Q202		2SC2878
$\star\star$	Q301		2SD880
$\star\star$	Q110		2SJ103
$\star\star$	Q105, Q106		2SK161
$\star\star$	Q101		2SK241
\star	D201		KV0714-3
\star	D406		RD2.4ESB2
\star	D305		RD6.2ESB3
\triangle	D301-D304		S5566
\star	D104-D108, D208-D211, D306-D308, D402-D405, D407-D409		1SS131
\star	D204-D207		1SS85
\star	D101-D103		1SV147

**COILS, FILTERS
AND TRANSFORMERS**

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
L201	AM OSC coil	ATB-100	C302		CEAS222M35
L101	FM coil	ATC1001	C148, C401		CEAS3R3M50
L102	FM coil	ATC1002	C130, C141, C211-C213		CEAS4RT7M50
L103	FM coil	ATC1004	C303		CEAS470M10
L104	FM coil	ATC1005	C143, C214		CEAS470M16
L105	FM coil	ATC1011	C144, C145, C216, C221		CKDVB102K50
L202	LW OSC coil	ATD-023	C152, C153		CKDVB182K50
L109	FM detector coil	ATE-074	C103, C104, C111, C112, C118,		CKDYF103Z50
L106-L108, L110, L401, L402	Axial inductor (2.2 μ H)	LAU2R2M	C154, C201, C202, C219, C224,		
			C407		
F102	FM ceramic filter	ATF-107	C225		CKDYF222Z50
F101	FM ceramic filter	ATF-119	C120, C121, C124, C126, C128,		CKDYF223Z50
F201	AM ceramic filter	ATF-208	C129, C132, C209, C210, C215,		
T201	AM antenna transformer	ATB-095	C217, C222, C307, C409, C411,		
T202	LW antenna transformer	ATD1002	C412		
▲ ★ T101	FM matching transformer	ATE-063	C155, C220, C223, C306		CKDYF473Z50
▲ ★ T301	Power transformer	ATT1021 (ATS-096)	C127		CKDXY473M25
			C206		CQSA301J50
			C205		CQSA431J50
			C149		CQSA471J50

CAPACITORS

Mark	Symbol & Description	Part No.	RESISTORS	Symbol & Description	Part No.
TC201, TC202	Trimmer	ACM-015	★ VR101	Semi-fixed (4.7k Ω)	VRTB6VS472
TC203	Trimmer	ACM-020	R466	Resistor array (22k \times 4)	RA4S223J
C404	(22000 μ F/5.5V)	ACH1023	R216, R218		RD1/4PM □ □ J
C156		CCDCH040C50	▲ R302		RFA1/4PL390J
C115		CCDCH080D50	▲ R301		RS1PMF182J
C203		CCDCH100D50	▲ Other resistors		RD1/8PM □ □ J
C113, C204		CCDCH150J50			
C405, C406		CCDCH270J50			
C114		CCDCH330J50			
C207		CCDCH560J50			
C101, C105, C106		CCDRH330J50	★ X402	Crystal resonator (7.20MHz)	ASS-025
C102		CCDRH390J50	★ X401	Ceramic resonator (4.000MHz)	ASS-030
C107		CCDSL020C50	★ X202	Ceramic resonator (450.0kHz)	ATF-125
C108		CCDSL030C50			
C109		CCDSL050C50			
C117		CCDSL070D50	4P Terminal (ANTENNA)		AKA1002
C110		CCDSL101J50	2P Pin jack		AKB-119
C122		CCDSL221J50			
C402, C403		CCDSL270J50			
C116		CCDTH180J50			
C146, C408		CEASR22M50			
C119, C123, C131, C208, C410,		CEAS010M50			
C413					
C147		CEAS1R5M50			
C218		CEAS100M50			
C304		CEAS101M10			
C226		CEAS101M16			
C150, C151		CEAS2R2M50			
C125		CEAS220M25			
C142, C305		CEAS221M16			

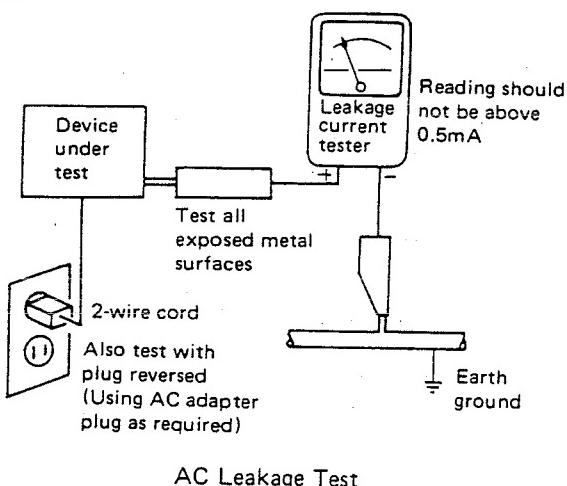
6. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.